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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,981	02/01/2006	Kazue Watanabe	F-8846	8317

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EXAMINER	
REDDY, KARUNA P	
ART UNIT	PAPER NUMBER
1796	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/550,981	WATANABE, KAZUE	
	Examiner	Art Unit	
	KARUNA P. REDDY	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 March 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/31/2008 has been entered.

   Claims 1, 5-7 and 11 are amended and claims 12-13 are added. Claims 1-13 are currently pending in the application.

2. Applicant's amendment to the specification, to correct a typographical error is acknowledged.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

4. Claims 1, 3-5, 7 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shih et al (US 6, 153, 288).

   Shih et al disclose a coatable composition comprising a pigment dispersed

in or mixed with a binder, which comprises an ethylene-vinyl acetate (EVA) emulsion polymer[1] and at least one water-soluble cationic polymer (column 1, lines 40-44). In example 4, ink-receptive composition containing a single cationic water soluble polymer is prepared by blending components in the order listed: 9 g Airflex 7200 that is an EVA emulsion polymer, 10 g Agefloc Wt50SLV i.e. poly(allyldimethylammonium chloride) which reads on water soluble cationic polymer of claim 1 and silicron which reads on the pigment of instant invention (column 8, lines 13-16). Furthermore, pigments useful include materials that increase the opacity and/or modify the porosity of coated substrate. Inorganic pigments are especially preferred and include silicic acid, which reads on the anionic functional substance[2]. It is noted that Airflex 7200 has a viscosity of about 9,500 cp and a mean particle diameter of 0.34 microns [3] and Airflex 465 is an aqueous emulsion adhesive[4].

Shih et al fail to disclose the wt% of resin and aqueous medium in aqueous emulsion; and wt% of aqueous emulsion type adhesive and cationic polymer.

However, while examples in Shih et al do not include an aqueous emulsion with a solids content of 50-55%, it is noted that exemplification is not a requirement for a proper 103 rejection. Given that, attention is drawn to Shih et

[1] US 2002/0086745 A1 of Rajagopalan is included as a reference to show that ethylene-vinyl acetate copolymer is an anionic polymer (paragraph 0108).

[2] US 4, 576, 864 of Krautter et al is included as a reference to silicic acid as an anionic substance (column 10, lines 44-45).

[3] US 6,245,851 B1 of Petrocelli et al is included as a reference to show that mean particle diameter of Airflex 7200 is 0.34 microns.

[4] US 5,851,613 of Perlman is used as reference to show that Airflex 465 is an aqueous emulsion adhesive.

al's disclosure (column 2, lines 50-52) wherein it is taught that EVA emulsion polymers preferably have a solids content of from about 40 to 75% i.e. resin is present in an amount of about 40 to 75% and aqueous medium is present in an amount of about 25 to 60%. Additionally, a preferred ink-receptive composition has about 15-70% EVA emulsion polymer, about 5-50% of at least one water soluble cationic polymer and 20-60% pigment (column 1, lines 54-57). Therefore, it would have been obvious to use an aqueous emulsion with a solids content of present claims i.e. 50-55 % by weight and use 50% by weight of at least one cationic polymer in the composition, absent evidence of unexpected results.

5. Claims 2 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shih et al (US 6, 153, 288) in view of Su (US 6, 124, 417).

The discussion with respect to Shih et al in paragraph 4 above is incorporated herein by reference.

The prior art reference of Shih et al is silent with respect to the usage of acrylic monomer and vinyl acetate monomer as polymer components of aqueous emulsion type acrylic pressure sensitive adhesive.

However, Su teaches water-receptive, water dispersible acrylic polymers that are non-tacky when dry but become tacky when wet. The composition comprises an acrylic based polymer prepared by emulsion polymerization of a

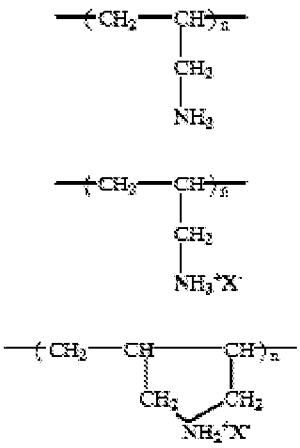
monomer mixture comprising alkyl acrylates, vinyl acetate and (meth)acrylic acid (column 2, lines 5-17). Films cast from these emulsion polymers are useful as ink jet imprintable polymers that provide upto 100% image transfer (column 2, lines 28-32). In one embodiment, the construction comprises at least one layer of water-activatable acrylic polymer coated on at least one water-impermeable layer (column 2, lines 36-38). See table 1 (column 7 and 8) for examples of emulsion polymers made from acrylates, vinyl acetate in an aqueous medium. Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to use an emulsion polymer comprising acrylates and vinyl acetate monomer because Su has proven successfully that emulsion polymers consisting of acrylic monomers and vinyl acetate which are non-tacky when dry but become tacky when wet show 100% image transfer at room temperature and therefore one of ordinary skill in the art would have expected the composition consisting of acrylic monomers and vinyl acetate to work with the composition of Shih et al, motivated by expectation of success.

6. Claims 6 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shih et al (US 6, 153, 288) in view of Miyabayashi et al (US 2001/0023266 A1).

The discussion with respect to Shih et al in paragraph 4 above is incorporated herein by reference.

Shih et al differ with respect to the cationic water-soluble polymer.

However, Miyabayashi et al teach ink composition comprising fine particles of resin (abstract). The diameter of fine particles is preferably about 0.005 to 0.3 microns (paragraph 0042). The fine particles of polymer comprise a thermoplastic polymer such as ethylene/vinyl acetate copolymers (paragraph 0049). In a preferred embodiment, it comprises the ink composition and a reaction solution comprising a reactant which produces an agglomorate upon contact with the ink composition. This method can produce an image having excellent fixation, drying to touch, rubbing/scratch resistance and waterfastness, good OD value and glossiness (paragraph 0095). Examples of reactants include polyallylamine and/or derivatives thereof (paragraph 0096). The polyallylamine and polyallylamine derivatives are cationic polymers that are soluble in water. Such polymers include those represented by the following formulae -



A copolymer of allylamine with a diallylamine may also be used (paragraph 0099). Therefore, it would have been obvious to use the monoallylamine of Miyabayashi et al in place of diallylamine for above mentioned advantages, and

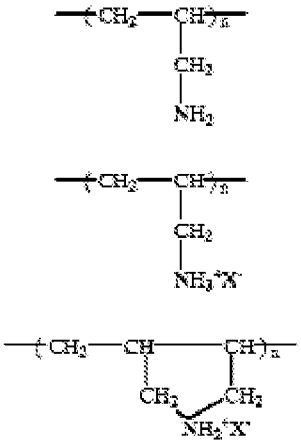
also because Miyabayashi et al has shown that monoallylamine is interchangeable with and equivalent to diallylamine.

7. Claims 1-2, 6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyabayashi et al (US 2001/0023266 A1).

Miyabayashi et al disclose a ink composition (abstract). According to a preferred embodiment, fine particles of the polymer comprise a thermoplastic polymer. Examples of fine particles include ethylene/vinyl acetate polymers (paragraph 0049). The fine particles of the polymer may be produced by conventional emulsion polymerization. Emulsifiers usable include anionic surfactants (paragraph 0051). See example (paragraph 0120) wherein aqueous medium is used to prepare the fine polymer particles. The pigment may be added in the form of a pigment dispersion prepared by dispersing the pigment in an aqueous medium with the aid of dispersant (paragraph 0063). The ink composition may contain fine particles of a general purpose polymer in addition to the fine particles of the polymer. The diameter of fine particles of the general purpose is preferably about 0.005 to 0.3 microns. The fine particles of the polymer may be one which is commercially available as a polymer emulsion. Examples include Voncoat 4001 (acrylic polymer emulsion). It is noted that Voncoat 4001 is an emulsion with a solids content of 50%[5] (paragraph 0076).

[5] US 6,080,229 of Watanabe et al is used as a reference to show that Voncoat 4001 has a solids content of 50%.

The ink composition of Miyabayashi et al can be used for a recording method using two liquids i.e. an ink composition and a reaction solution comprising a reactant which produces an agglomerate upon contact with the ink composition. This method can produce an image having excellent fixation, drying to touch, rubbing/scratch resistance, waterfastness, good OD value and glossiness (paragraph 0095). Examples of reactants include polyvalent metal salts and/or polyallylamine and/or derivatives (paragraph 0096). The polyallylamine and polyallylamine derivatives are cationic polymers that are soluble in water. Such polymers include those represented by the following formulae -



A copolymer of allylamine with a diallylamine may also be used (paragraph 0099). The selection may be determined by taking a combination of the ink composition with reaction solution into consideration (paragraph 0107).

Miyabayashi et al is silent with respect to the amount of cationic water soluble polymer.

However, while Miyabayashi et al does not elucidate that value, it is the examiner's position that amount of cationic water soluble polymer is a result-effective variable (MPEP 2144.5) since the amount used clearly affects various properties of the composition such as fixation, dryness to touch, rubbing/scratch resistance, waterfastness, OD value and glossiness. Hence, the choice of a particular amount of cationic water soluble polymer (such as the amount in present claims) is a matter of routine experimentation and would have been well within the skill level of, and thus obvious to, one of ordinary skill in the art.

8. Claims 7 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyabayashi et al (US 2001/0023266 A1) in view of Goldberg (US 4,889,559).

The discussion with respect to Miyabayashi et al in paragraph 7 is incorporated here by reference.

Miyabayashi et al is silent with respect to viscosity of aqueous emulsion.

However, Goldberg et al teach latent ink comprising a film forming agent which is used to adjust viscosity of ink (abstract). The thickening agent is preferably a latex emulsion selected from the group consisting of acrylic homopolymers and copolymers. The predetermined viscosity should be of the order of 1000 cps to about 50,000 cps (column 8, lines 13-20). The thickening agent provides for the tight control of the viscosity of latent inks allowing control of the flow of ink during the printing process so that positioning of the dots of ink on the substrate can be accurately placed (column 9, lines 41-46). Therefore, it

would have been obvious to adjust viscosity of the aqueous emulsions of Miyabayashi from about 1000 cps to about 50,000 cps, for above mentioned advantages, absent evidence of unexpected results.

Response to Arguments

9. Applicant's arguments filed 7/25/2008 have been fully considered but they are not persuasive.

Specifically, applicant argues that there is no disclosure or suggestion in Su that the polymers are utilized in any composition for coating a substrate because Su specifically discloses that the polymers are utilized to make the substrate to be coated. Attention is drawn to (column 2, lines 23-24) wherein Su teaches that film cast from the emulsion polymers are water-receptive. In one embodiment of Su, the construction comprises at least one layer of water-activatable acrylic polymers (column 2, lines 36-38). Thus, it is apparent that the acrylic polymers of Su are used for coating.

10. Applicant's arguments filed 3/31/2008 have been fully considered but they are not persuasive.

Specifically, applicant argues that there is no disclosure that emulsion polymer in Shih et al is an acrylic pressure sensitive adhesive. It is the examiner's position that compositional requirements of present claims is met by

the composition of Shih et al and being able to function as an acrylic pressure sensitive adhesive is an intended use. Furthermore, it is noted that Airflex emulsions used in Shih et al are sold as adhesives.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KARUNA P. REDDY whose telephone number is (571)272-6566.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service

Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Karuna P Reddy/
Examiner, Art Unit 1796

/David Wu/

Supervisory Patent Examiner, Art Unit 1796